

CASIO
DT-X7 Series
Quick Start Guide
(Version 1.13)

CASIO Computer Co., Ltd.

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April 2008

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Preface

This guide clearly and concisely sets out the information developers need to know to get started with the CASIO DT-X7 series development. The best methods of connecting to your development system are covered and step by step instructions for installing and testing the CASIO SDKs are included.

The purpose of this guide is to get you to the point where you can start development; you should refer to the library manuals for detailed information on the specific APIs.

Important Note

Since the DT-X7 does not have a touch panel display, it is not possible to click on a tab or icon on the screen. However, you can change the focus using the F3 key (similar to Tab key on PC's keyboard) or the F2 key (similar to Shift+Tab keys on PC's keyboard).

The Mouse Emulator preinstalled in the DT-X7 series can be invoked by pressing the Fn key and then 4 key to make the mouse pointer appear in the center of the screen. It can be freely moved in any direction on the screen you wish using one of the 1, 2, 3, 4, 6, 7, 8, and 9 numeric keys. The 5 key is the same as left-clicking the PC's mouse. For details, see "Using the mouse cursor" on page E-28 of DT-X7 Series User's Guide.

In this reference manual, all explanations assume that the preinstalled Mouse Emulator is in the invoked state.

Editorial Record

[illegible]

1. Product Overview

The DT-X7 has been designed using the new concept of the Human-centered Design Processes and is capable of performing a wide variety of powerful functions.

The following is a brief overview of the features available on the DT-X7 series handheld terminals. For further detail on the hardware specifications, refer to DT-X7 Series Hardware Manual.

Outstanding development environment

- Microsoft® Windows® CE 5.0 English Version as the built-in OS
- Visual Studio 2005
- Visual Studio .NET 2003 (Windows® CE .NET Utilities v 1.1 for Visual Studio .NET 2003)
- eMbedded Visual C++ 4.0

Compatibility with various communication systems

- Built-in ultra-small WLAN module compatible with the IEEE802.11b/g standard
- High speed infrared communication with IrDA Ver. 1.3
- Bluetooth® Version 2.0
- Serial interface with USB version 1.1 (Host/Client)

Small size, light weight (improved portability)

- Dimensions : Approx. 52.5 (W) x 166 (D) x 30.5 (H) mm
- Weight : Approx. 145 g

Improved durability

- Impact resistance
- Dust/Water-splash proof

Capable of scanning industrial standard bar code symbologies

- Readable bar code symbologies:
UPC-A/E, EAN8, EAN13, Codabar, Code39, Code93, Code128/EAN128, ITF, MSI, Industrial 2of5, IATA, RSS-14, RSS Limited, RSS Expanded, RSS Stacked, RSS Expanded Stacked

CPU/Memory

- High-performance CPU
- Marvell® PXA270 Application Processor (runs at maximum 416 MHz)
- Large-capacity memory
 - RAM : 64MB (user area; approximately 40 MB)
 - F-ROM : 64MB (user area; approximately 30 MB)

* The drop durability height is a measured value resulting from actual testing. It does not necessarily guarantee the product from damage.

2. Prerequisites

2.1 Skills Required

The following skills are required by developers aiming to develop application software for the DT-X7.

- Windows programming
- A good knowledge of one or more of the following
 - Visual C++
 - Visual Basic .NET
 - Visual C# .NET
 - Browser based applications (not covered in this guide)

The following skills or experience are also desirable.

- Windows CE devices
- ActiveSync
- Some networking experience

2.2 Hardware Required

The following models of the DT-X7 series and dedicated options are available.

- DT-X7

Table 2.1 Available models and features

Model no.	Laser Scanner	Linear	Bluetooth	Bluetooth	WLAN (IEEE802.11)
DT-X7M10U	No	Yes	Yes	No	No
DT-X7M10E	Yes	No	No	Yes	No
DT-X7M10R	Yes	No	No	Yes	Yes
DT-X7M10E-	Yes	No	No	Yes	No
DT-X7M10R-	Yes	No	No	Yes	Yes

Note:

The model with “-CN” denotation is for destination of China only.

- Battery Packs
 - HA-F20BAT (Battery Pack, 1100 mAh)
 - HA-F21LBAT (Large-capacity Battery Pack, 1880 mAh)
- Options
 - AD-S15050BE (AC Adaptor for HA-F30CHG)
 - AD-S42120BE (AC Adaptor for HA-F60IO, HA-F62IO, HA-F32DCHG)
 - AD-S60160BE, AD-S60160BU (AC Adaptor for HA-F36DCHG)
 - HA-F60IO (USB Cradle)
 - HA-F62IO (Ethernet Cradle)
 - HA-F30CHG (Cradle-type Battery Charger)
 - HA-F32DCHG (Dual Battery Charger)
 - HA-F36DCHG (Cradle-type Dual Battery Charger)

- DT-380USB (USB cable)
- HA-F95HB (Hand Belt)

Note:

“-CN” attached at the end of model number denotes that the model is dedicated for the final destination of China. A note about compliance with the Chinese “RoHS” requirement promulgated by the Ministerial Decree No. 39 is included in the carton box; the RoHS compliant seal is affixed on the body and the seal of the packing material recycle marking is affixed on the carton box.

See the following page for external views of the DT-X7 and the dedicated options.

External views of the DT-X7 and the dedicated options

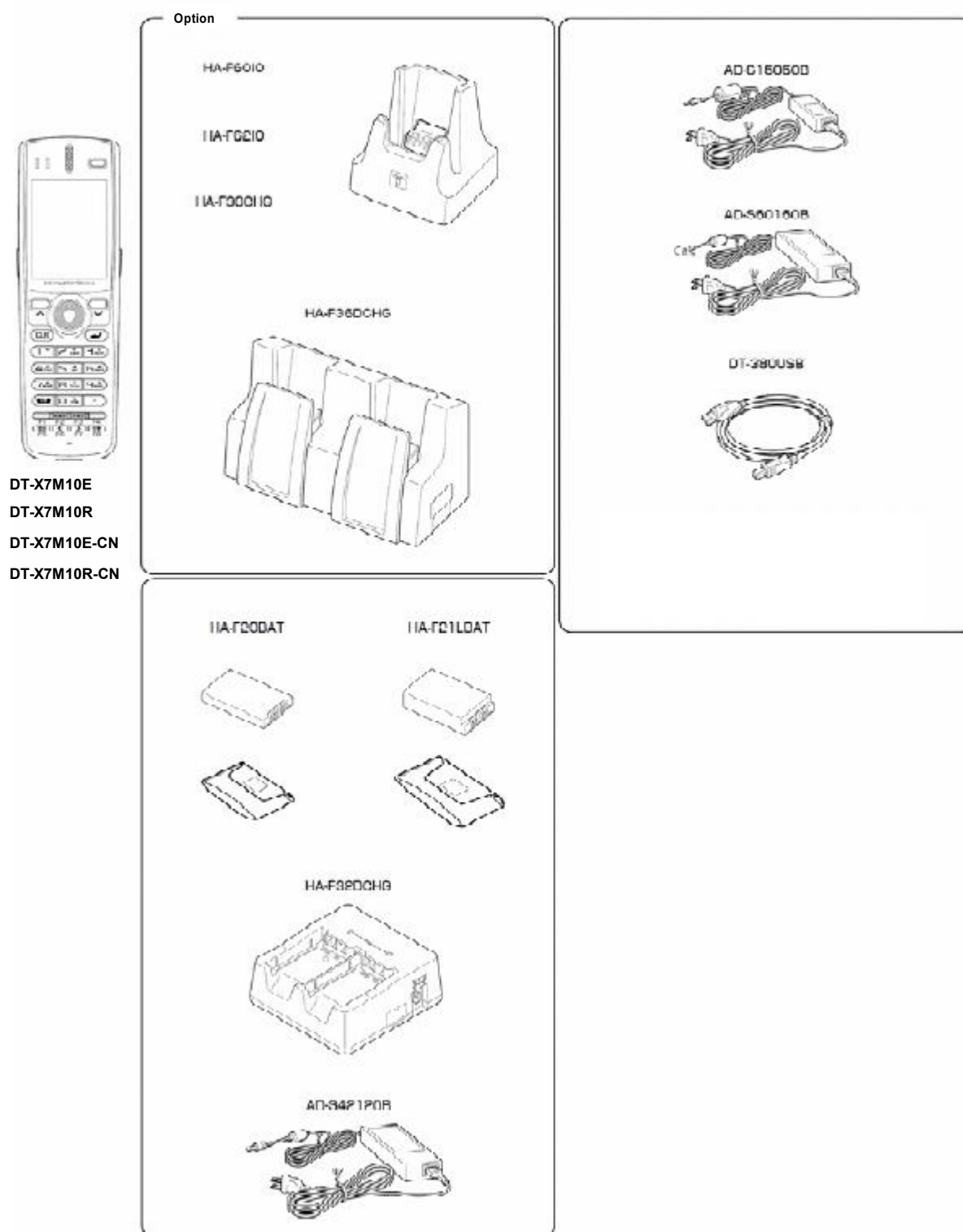


Figure 2.1

2.3 Software Required

The following software tools and libraries are required in order to develop software for the DT-X7. Please ensure that you download or purchase the correct Microsoft tools as appropriate.

C / C++

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Download for free from;

<http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F07AAA1914&displaylang=en>

Visual Basic / Visual C#

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Microsoft Visual Studio 2005 (not free of charge)

Microsoft Visual Studio .NET 2003 (not free of charge)

Windows CE Utilities for Visual Studio .NET 2003 Add-on Pack 1.1

From Microsoft web site, see

<http://www.microsoft.com/downloads/details.aspx?familyid=7ec99ca6-2095-4086-b0cc-7c6c39b28762&displaylang=en>

Microsoft ActiveSync 4.2 (or later)

Download for free from;

<http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en>

Microsoft Windows Mobile Device Center 6.1 (for Windows Vista)

Download for free from;

<http://www.microsoft.com/downloads/details.aspx?familyid=46F72DF1-E46A-4A5F-A791-09F07AAA1914&displaylang=en>

CASIO DT-X7 SDK

Download the DT-X7 SDK from

http://www2.casio.co.jp/system_en/pa/PADealer/

(The site requires your user name and password. Enter your user name and password as issued by CASIO.)

DT-X7_SDK.msi

- en_DevEmu500.msi

- en_MoDev.msi

- en_Flink.msi

- en_JPEG.msi

- en_MoDevSamle.msi

- en_FlinkSample.msi

- en_JPEGSample.msi

3. Setting Up the Development Environment

3.1 Application Development

This chapter explains about what you need to set up for the development environment before starting your application development.

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with the development platform can be started. After application is developed, transfer it to the Device Emulator or an actual terminal of the DT-X7 via ActiveSync or Windows Mobile Device Center for check on the operability. For application development method and transferring your application, refer to “eMbedded Visual C++”, ”Visual Studio .NET 2003 and Visual Studio 2005”.

3.2 Installing CASIO SDK Files

Download the CASIO DT-X7 SDK files from the following site and execute each “msi” file listed in Table 3.1 ;

http://www2.casio.co.jp/system_en/pa/PADealer/

(The site requires your user name and password. Enter your user name and password as issued by CASIO.)

Table 3.1

CASIO SDK File	Description	Default folder path
DT-X7_SDK.msi	DT-X7 Export SDK	C:\Program Files\Windows CE Tools\wce500\DT-X7
en_DevEmu500.msi	DT-X7 Emulator	C:\Program Files\Common Files\CASIO\Emulator
en_MoDev.msi	Common Device Control Library	C:\Program Files\CASIO\MBSys
en_Flink.msi	FLINK Library	C:\Program Files\CASIO\MBSys
en_JPEG.msi	JPEG Library	C:\Program Files\CASIO\MBSys
en_MoDevSample.msi	Common Device Control Library sample program	C:\Documents and Settings\All Users\Application Data\CASIO\Samples
en_FlinkSample.msi	FLINK Library sample program	C:\Documents and Settings\All Users\Application Data\CASIO\Samples
en_JPEGSample.msi	JPEG Library sample program	C:\Documents and Settings\All Users\Application Data\CASIO\Samples

3.3 Installing CAB Files

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Library	CAB file
Common Device Control library (see	en_MoDev.ARMV4I.CAB
JPEG library	enJPEG.ARMV4I.CAB
FLINK library	en_Flink.ARMV4I.CAB

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CAB file	Description
USBClientDTX7.110.CAB	USB client supported by Windows Mobile Device

3.4 eMbedded Visual C++ 4.0

ExportSDK for DT-X7 is required to develop application software with eMbedded Visual C++ 4.0 (see note 1). Follow the steps below to install it.

1. Double click the **DT-X7_SDK.msi** (see note 2) file and follow the prompts that appear on the screen to install the SDK.
2. When prompted whether you want to install **Custom** or **Complete** installation, choose **Complete**.
3. When the installation is finished, start up eMbedded Visual C++ 4.0.
4. Go to Chapter 7 “eMbedded Visual C++” and follow the instructions to verify that the SDK has been installed correctly.

If eMbedded Visual C++ has been installed in your PC already, you will notice that you now have a new SDK and, once you select that new SDK, a new target device (DT-X7) in the comb-box menu in the toolbar. Also, if you use any of the Remote Tools in eVC++ then you will find DT-X7 is listed as a new target (for example, try the Remote Registry Editor).

For more details, refer to Chapter 7 “eMbedded Visual C++”.

Notes:

1. If eMbedded Visual C++ 4.0 is used to develop application software, be sure to install Service Pack 4 prior to the development.
2. Other SDKs (e.g. standard SDK etc.) released before the **ExportSDK** are also operable.
3. Application software developed using MFC (Microsoft Foundation Class) for CASIO IT-10 is not operable on the DT-X7.
4. Any application developed not using MFC is operable on the DT-X7.

3.5 Visual Studio 2005

Install each 'msi' package as described in Table 3.1. This will install all the necessary SDK and library files on your PC. See Chapter 8, for basic usage instructions for the SDK. Follow the steps in Chapter 5 “Connecting the DT-X7 to the PC” before checking the steps below to confirm that you can connect to the DT-X7 from Visual Studio 2005.

1. Establish connection with the DT-X7 via ActiveSync.
2. Open the application project for VB or C# in Visual Studio 2005.
3. Click the button shown in the red box below (see Figure 3.1) to make sure that Visual Studio 2005 has recognized the connection established with the DT-X7 via ActiveSync. If it does not, start up ActiveSync again to establish connection.

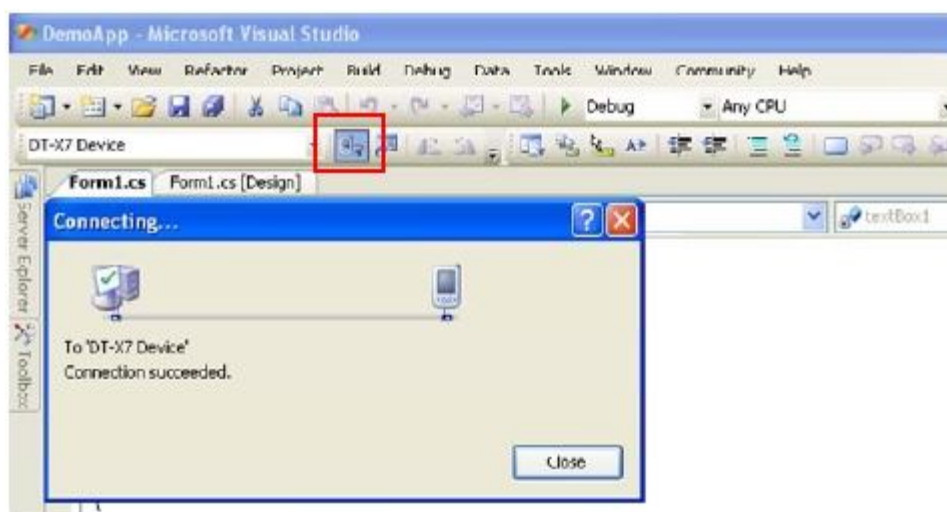


Figure 3.1

4. Choose **DT-X7 Device** in the pull-down menu box in Figure 3.2.

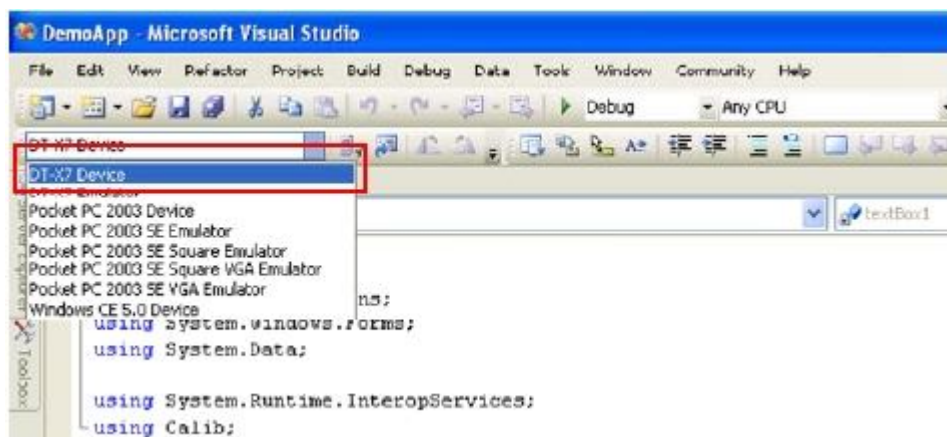


Figure 3.2

5. You will now be able to deploy solutions and also debug applications on the attached DT-X7 using the Visual Studio 2005 debugging features.

3.6 Visual Studio .NET 2003

Install each ‘msi’ package as described in Table 3.1. This will install all the necessary SDK and library files on your PC. See Chapter 8. for basic usage instructions for the SDK. Follow the steps in Chapter 5 “Connecting the DT-X7 to the PC” before checking the steps below to confirm that you can connect to the DT-X7 from Visual Studio .NET 2003. Microsoft has released an add-on for Visual Studio .NET 2003 that allows you to set the target CPU for a connected device (Visual Studio is unable to detect the target CPU of non-Pocket PC devices).

Follow the steps below to install the add-on pack.

1. Download “Windows CE Utilities for Visual Studio .NET 2003 Add-on Pack 1.1” from the site described in Chapter 2.3 “Software Required”.
2. Establish connection via **ActiveSync** between the DT-X7 and PC using any of the methods described in this guide.
3. Navigate to **Tools** → **Select Windows CE Device CPU**.
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You will now, for example, be able to choose **Deploy <appname>** from the **Build** menu and your project will be directly deployed to the DT-X7. You will now also be able to remotely debug applications over your ActiveSync connection.

4. Connecting Power Supply to HA-F60IO, HA-F62IO

4.1 HA-F60IO

Use the dedicated AC adaptor (AD-S42120BE) for supplying power to the HA-F60IO USB Cradle. Ensure that you connect the AC adaptor to the cradle before starting communication between the DT-X7 and PC via the cradle. Follow the steps below to connect the power supply to the DT-X7 using the dedicated AC adaptor.

1. Plug the AC adaptor into the AC adaptor jack where “DCIN12V” is printed on the back of the cradle.

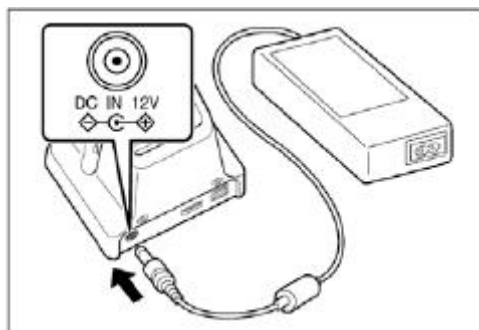


Figure 4.1

2. After connecting the power cable to the AC adaptor, plug in the plug to an electrical outlet.

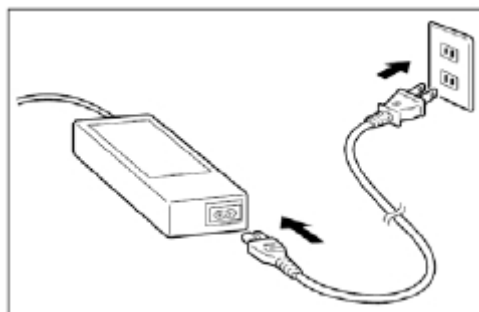


Figure 4.2

3. Make sure the selector switch on the back of the cradle is set to position B.

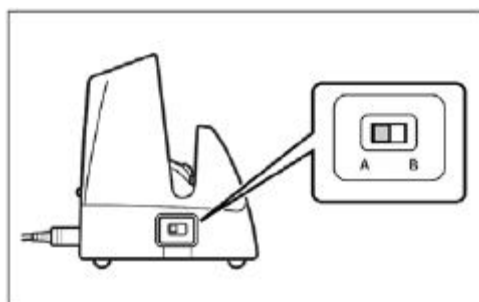


Figure 4.3

4. Connect a USB cable (DT-380USB) to the USB client port on the back of the cradle, and then connect the other end of the cable to the PC. USB host port is used when connecting the cradle with other USB peripheral devices.

Figure 4.4

5. Align the USB cradle mount holes on the back of the DT-X7 with the mount hooks on the cradle after aligning the contacts on the bottom of the DT-X7 with the power contacts of the cradle. The power LED on the front of the cradle will light green if the DT-X7 has been properly mounted.

Figure 4.5

Status of Indicator 1 on DT-X7

Orange

Red

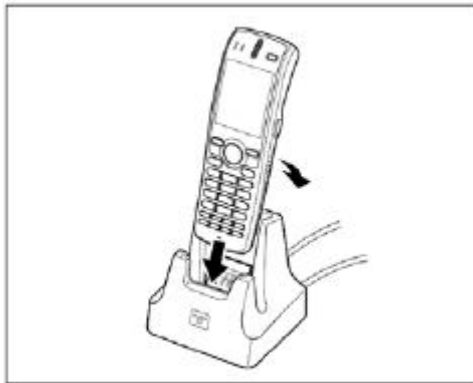
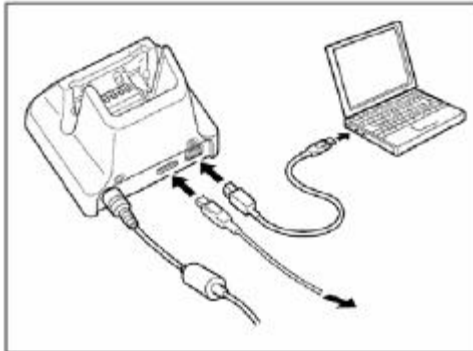
Green

Important notes:

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lights green. Charging the battery pack or communication will not proceed if it is not mounted properly.

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4.2 HA-F62IO

Use the dedicated AC adaptor (AD-S42120BE) for supplying power to the HA-F62IO Ethernet Cradle. Ensure that you connect the AC adaptor to the cradle before starting communication between the DT-X7 and PC via the cradle. Follow the steps below to connect the power supply to the DT-X7 using the dedicated AC adaptor.

1. Plug the AC adaptor into the AC adaptor jack on the back of the Ethernet Cradle.

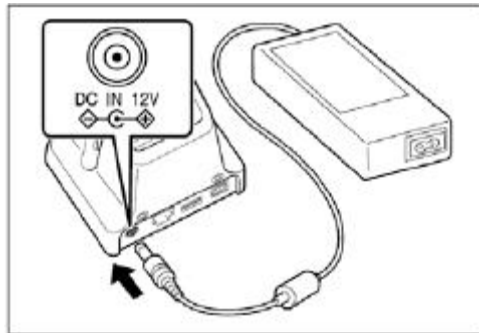


Figure 4.6

2. After connecting the AC adaptor to the power cable, plug in the plug of the power cable to an electrical outlet.

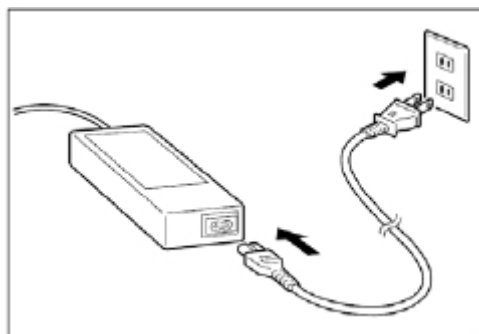


Figure 4.7

3. Set the selector switch on the back of the Ethernet cradle to the port that will be used. Set the switch to “LAN” to use the LAN port or to “USB” to use the USB port.

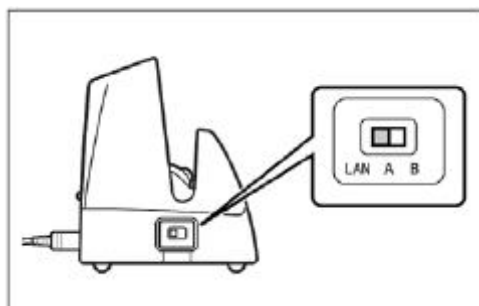


Figure 4.8

4. Before using the cradle ports, remove the caps from the ports. When using a LAN, connect one end of the LAN cable to the LAN port and the other end to the PC or hub. When using a USB connection, connect one end of the USB cable (DT-380USB) to the USB port and the other end to the PC.

Figure 4.9

5. Align the contacts on the underside of the DT-X7 with the power supply contacts on the Ethernet Cradle and then set the DT-X7 into the cradle so that mount holes in the back of the DT-X7 are aligned with the mount hooks on the cradle. Once the DT-X7 is properly set in the cradle, the power LED on the front of the Ethernet cradle lights green.

Figure 4.10

Status of Indicator 1 on DT-X7

Orange

Red

Green

Important notes:

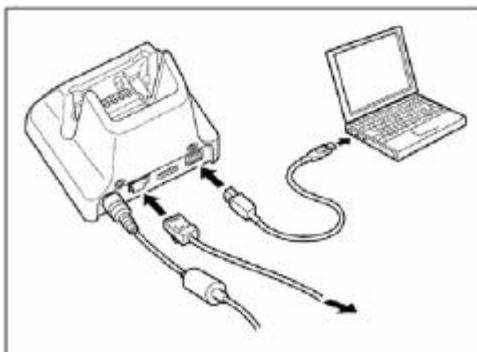
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lights green. Charging battery pack or communication
will not proceed if it is not mounted properly.

The LAN and USB connections cannot be used concurrently.

Always cap ports that are not being used. Using the Ethernet Cradle while the ports are
uncapped can cause damage.

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5. Connecting the DT-X7 to PC

To make connection establishment with PC, use one of the methods, depending on the OS your PC runs, described below.

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5.1 ActiveSync Connection

In nearly all cases during development work you will be communicating with the DT-X7 via an ActiveSync connection. There are many ways to connect the DT-X7 to a PC via ActiveSync.

5.2 ActiveSync Connection via USB

If you have already installed ActiveSync and connected the DT-X7 to the PC via direct USB, You may skip Chapter 5.2.1. You already have the USB driver and ActiveSync in your development environment. If you do not yet have the cradle driver on your PC, .download the USB driver files “wceusbsh.inf” and “wceusbsh.sys” from the CASIO Web Site and copy them to an appropriate folder.

5.2.1 Installing ActiveSync for the First Time

1. Install ActiveSync first. Run the ActiveSync 'msi' file.

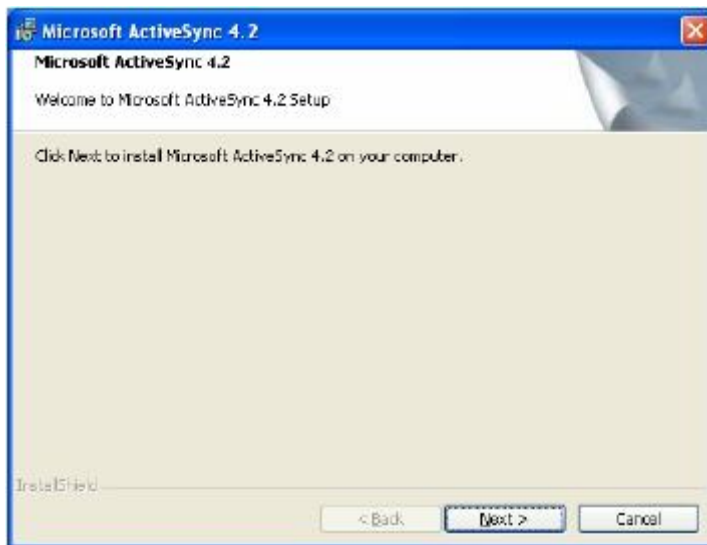


Figure 5.1

2. Click **I**nstall button.

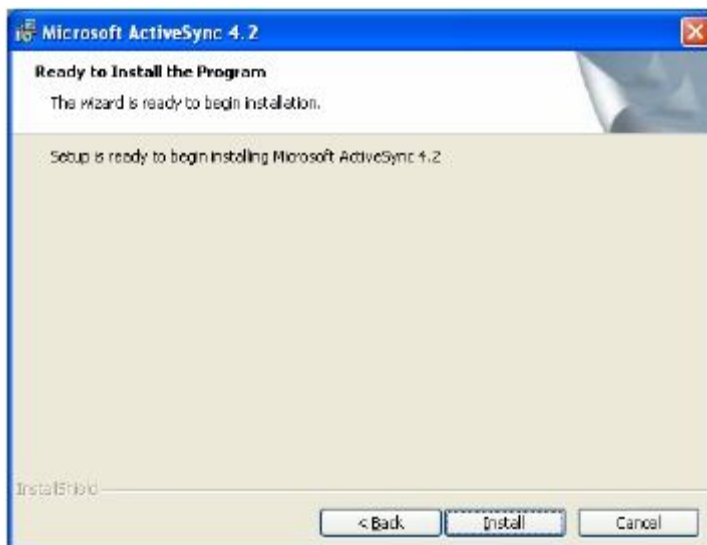


Figure 5.2

3. Pause the installation when the menu in Figure 5.3 is displayed; you have to install the driver at this point.



Figure 5.3

4. Connect the USB cable to the PC and the other end to the USB Cradle and also the AC adaptor to the USB Cradle.
5. Put the DT-X7 on the cradle and confirm that the green LED on the front of the cradle is lit. If not, be sure the DT-X7 is positioned firmly on the cradle.
6. When the DT-X7 is mounted on the USB Cradle, a dialog is displayed to prompt you to install the suitable driver. If you have not yet obtained the driver files, see page 23 for details of what you need to download.
7. Choose **No, not this time** radio button in Figure 5.4 and then click **Next>** button.



Figure 5.4

8. Then, choose **Install from a list or specific location [Advanced]** radio button in the menu.



Figure 5.5

9. Click **Next >** button.

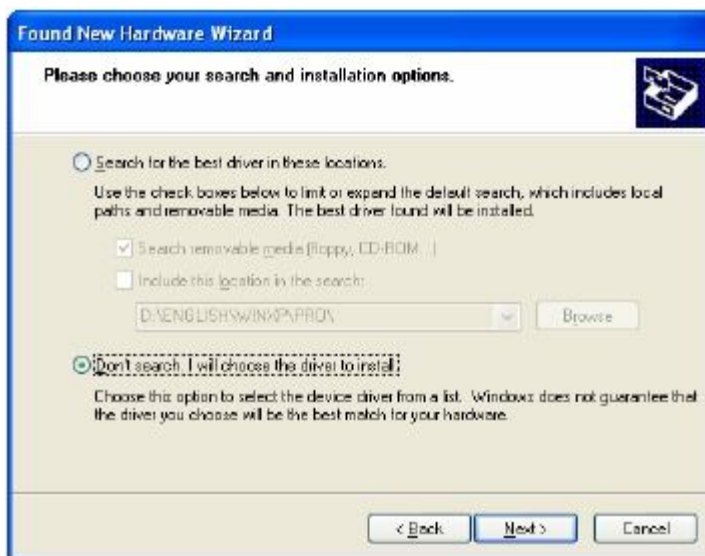


Figure 5.6

10. Choose **Windows CE USB Devices** icon.



Figure 5.7

11. Click **Have Disk...** button.



Figure 5.8

12. Click **Browse...** button. Select “wceusbsh.inf” from the folder you created in step 6.



Figure 5.9

13. The installation of the driver will start.

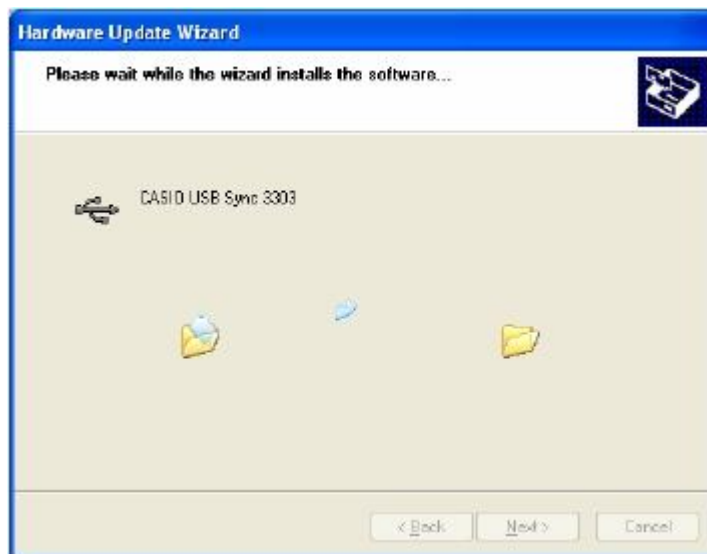


Figure 5.10

14. Click **C**ontinue Anyway button.



Figure 5.11

15. A menu might be displayed to prompt you to install “wceusbsh.sys”. This happens if “wceusbsh.sys” is not in the same folder as “wceusbsh.inf”. Download this file from the CASIO Web Site and follow the prompts to specify the location of “wceusbsh.sys”.

16. Now the installation of the driver is finished.



Figure 5.12

17. Now go back to the ActiveSync Installation Wizard that you left on the desktop. Click **Next >** button.



Figure 5.13

18. Now the connection is established. You can select either partnership option according to your needs. Then click **Next >** button.

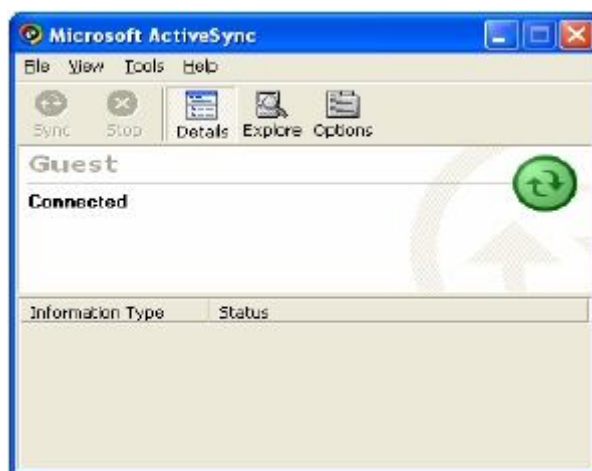
Figure 5.14

19. Now the connection is completed. You can start up eMbedded VC++ or Visual Studio and create a program and deploy it to the DT-X7.

Figure 5.15

Notes:

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5.2.2 If ActiveSync Is Already Installed

This is the procedure if ActiveSync is already installed on the PC. You just need to let the PC recognize the DT-X7 and install the cradle driver as in steps 6 to 16 in Chapter 5.2.1.

1. Select **File** → **Connection Settings....** from the menu in ActiveSync. See Figure 5.16.

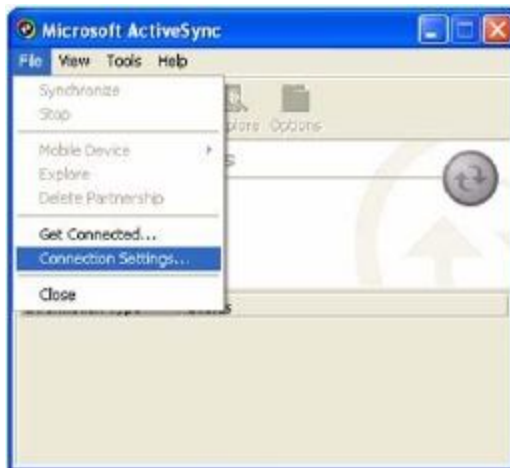


Figure 5.16

2. Check **Allow USB connection with this desktop computer. USB is available.**



Figure 5.17

3. On the DT-X7, in **Control Panel**, select the **PC Connection** option. Confirm that PC Connection is set to “USB Default”. If not, select ‘**USB Default**’ and tap **OK** button.

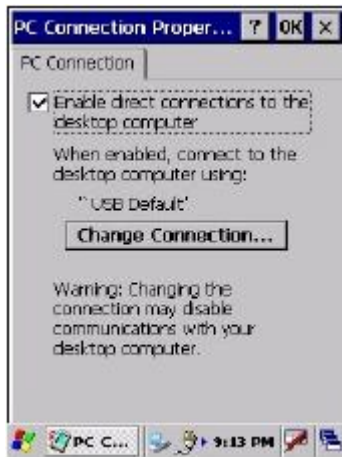


Figure 5.18

4. When the DT-X7 is mounted on the USB Cradle, a menu to prompt to install the driver is displayed. Follow the same steps in Chapter 5.2.1.



Figure 5.19

5.3 USB Connection via Windows Mobile Device Center

To establish connection via USB interface with PC runs in Windows Vista, use Windows Mobile Device Center (“WMDC”). The DT-X7 with the factory-setting (default) does not support the WMDC. Follow the procedure below to change the setting on the DT-X7.

Note:

Note that the CAB file, **USBClientDTX7E.110.CAB**, must be installed in the DT-X7 prior to establishing connection with the DT-X7 via Windows Mobile Device Center. For installation method, refer to Chapter 3.3 “Installing CAB Files”.

Procedure

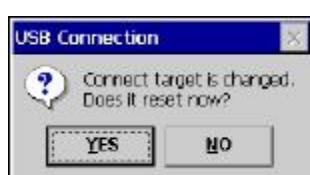
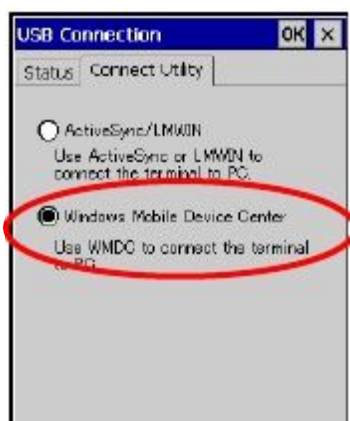
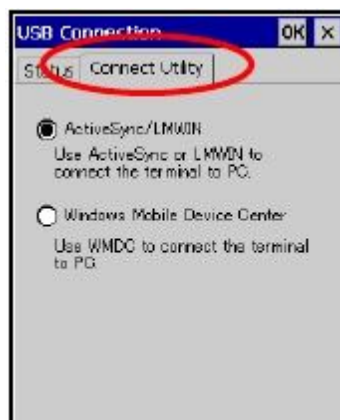
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Figure 5.20

- 4.

Figure 5.21

- 5.



6. The DT-X7 starts up again.
7. Mount the DT-X7 on the cradle, and then follow a message appeared in the WMDC on the PC.

Notes:

- To resume the factory default setting, choose **ActiveSync/LMWIN** radio button in Step 3 on the previous page, and start up the DT-X7 again.
- The WMDC version 6.1 or later will support the connection establishment via USB interface. Any other versions of the WMDC earlier are not interoperable with Windows CE devices.

5.4 ActiveSync Connection via IrDA

If the PC has an IrDA interface, it is possible to connect the DT-X7 to the PC via IrDA using ActiveSync.

Follow the steps below:

1. Choose **PC Connection** in the **Control Panel** on the DT-X7.
2. Set PC Connection to IrDA.
3. Set the COM port used by ActiveSync on the PC to **Infrared Port(IR)**.
4. Place the IrDA port located on the bottom of the DT-X7 facing the IrDA port on the PC.
Communication can be established if the distance is between zero and approximately 1 m. In the case of 4Mbps rate, the maximum distance is approximately 30 cm.
5. On the DT-X7, from **Start** menu, navigate to **Programs** → **Communication** → **ActiveSync** to start up ActiveSync.

5.5 ActiveSync Connection via Ethernet Cradle

This chapter describes how to establish a high speed LAN connection on the WLAN non-integrated models (DT-X7M10E and DT-X7M10U) with HA-F62IO Ethernet cradle via ActiveSync 3.8 (see note) or earlier.

Note:

Later versions of the Microsoft ActiveSync do not support this connection. Use version 3.8 or earlier to establish the connection.

Follow the steps below:

1. Establish partnership first between the DT-X7 and PC using any method so far described in this guide (connection establishment via either IrDA, USB cradle or Ethernet cradle).
2. Connect the dedicated AC adapter to the Ethernet cradle as described in Chapter 4.2 .
3. Connect one end of the network cable to the Ethernet cradle and the other end to the network hub.
4. Make sure the selector switch on the back of the HA-F62IO Ethernet cradle is set to the position "LAN". See Figure 5.23 below.

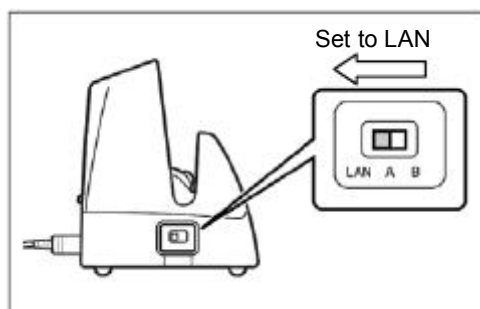


Figure 5.23

5. Place the DT-X7 in the cradle and navigate to **Start** → **Settings** → **Control Panel** → **Network and Dial-up Connections**.
6. The following screen will appear. Double click the **AX887721** icon. The icon will not appear unless the terminal is set in the cradle.



Figure 5.24

7. The following TCP/IP screen appears. Set all the parameters in **IP Address** and **Name Servers** tabs as required and click **OK** button.

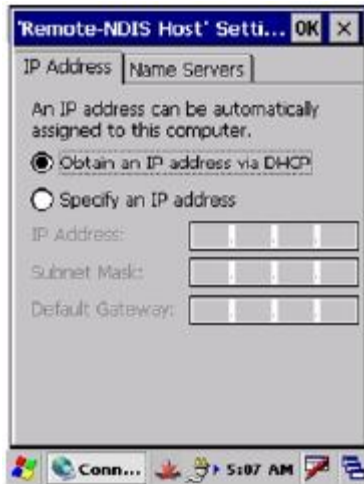


Figure 5.25

8. If the connection is established correctly, the icon () in the taskbar changes to ().
9. On the PC, make sure that **Allow network...** checkbox is checked in the ActiveSync setting.
10. On the DT-X7, navigate to **Start** → **Programs** → **Communication** → **LAN ActiveSync** to initiate the connection. Make sure in the popup ActiveSync menu box that **Network Connection** is the selected connection method and **Connect to:** field is the name of your PC. Click **Connect ...** button and then the connection should be established.

5.6 Accessing Shared Network Drive on Your LAN

Assuming you have a valid network connection established, you can access shared drives on your PC from the **File Explorer** on the DT-X7. The following shows the steps to initiate this.

- 1.
- 2.
- 3.
- 4.
- 5.

5.7 Direct TCP/IP Connection from Visual Studio

If you have a network connection to the DT-X7 (for example, via WLAN or the Ethernet cradle) then you can establish a direct link to the development PC without using ActiveSync.

For Visual Studio .NET 2003

You require the WindowsCE Utilities add-on pack (described in Chapter 3). Refer to the readme file supplied with the add-on pack for details on how to set up the connection.

For Visual Studio 2005

1. Download the files listed below to the DT-X7.

- Clientsshutdown.exe
- ConmanClient2.exe
- CMAccept.exe
- DeviceDMA.dll
- eDbgTL.dll
- TcpConnectionA.dll

The source folder in the PC:

C:\Program Files\Common Files\Microsoft Shared\CoreCon\1.0\Target\wce400\armv4i

The destination folder in the DT-X7:

\Windows

2. Run **ConmanClient2.exe** on the DT-X7.
3. Set the device IP address in Visual Studio 2005.

Navigate to **Tools** in the main menu of Visual Studio 2005 → **Options...** → **Device Tools** → **Devices**.

Choose **DT-X7 Device** in the pull-down menu of **Devices:** and click **Properties...**

Click **Transport:** to access **Configure...** and set up **Device IP address** as shown in Figure 5.26.



Figure 5.26

4. Run CMAccept.exe on the DT-X7.
5. Navigate to **Tools** in the main menu of Visual Studio 2005 → **Connect to Device....**

6. Select **DT-X7 Device** in the list of **Devices:** and click **Connect** button. The screen in Figure 5.27 if appear indicates the success of connection establishment.

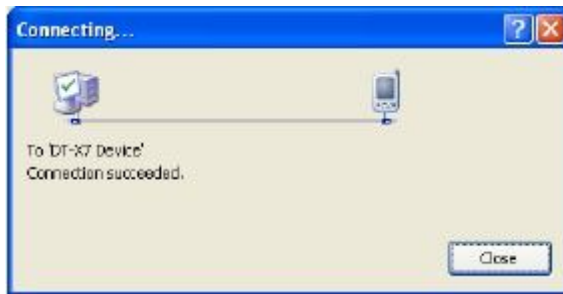


Figure 5.27

6. Configuring WLAN on the DT-X7

To establish communication between the DT-X7 (DT-X7M10R) and PC via WLAN configuration, follow the steps, 1 to 6, below to set up a WLAN configuration on the DT-X7. After setting up the configuration, be sure to perform a site survey prior to starting communication via WLAN.

1. Navigate to **Start** → **Settings** → **WLANConfig** and then click **IP** tab.

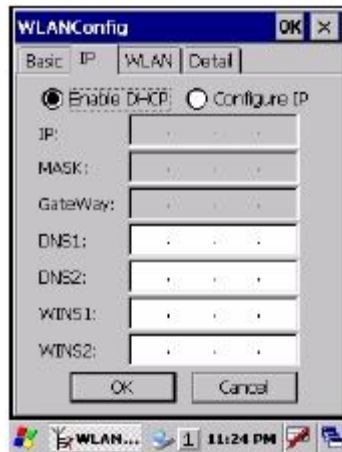


Figure 6.1

Table 6.1

Parameter	Description
Enable DHCP or Configure	Determines “Enable” or “Disable” for DHCP.
IP	Determines IP address.
MASK	Determines subnet mask.
GateWay	Determines default gateway.
DNS1	Determines primary DNS address.
DNS2	Determines secondary DNS address.
WINS1	Determines primary WINS address.
WINS2	Determines secondary WINS address.

If any of the settings in Figure 6.1 is omitted, the process described in the following table will automatically take place in the field.

Table 6.2

Parameter	Nothing is set (DHCP)	”Configure IP” is set
Enable DHCP or Configure IP	”Enable DHCP” is assumed.	”Configure IP” is set.
IP	Does not determine IP address.	Entered address is set as is.
MASK	Does not determine subnet mask.	Entered address is set as is.
GateWay	Does not determine gateway.	Entered address is set as is.
DNS1	Does not determine primary DNS address.	Entered address is set as is.
DNS2	Does not determine secondary DNS address.	Entered address is set as is.
WINS1	Does not determine primary WINS address.	Entered address is set as is.
WINS2	Does not determine secondary WINS address.	Entered address is set as is.

2. Click **Basic** tab. Set each parameter in the tab by referring to the descriptions for the parameters in Tables 6.3 and 6.4



Figure 6.2

Table 6.3

Parameter		Description
SSID		Enter the SSID of the network you want to connect to.
Security	Disab	None.
	WEP	Open in Authentication field.
	WPA	PSK in Authentication field (if selected, the Key field must be set also.) EAP-PEAP in Authentication field
Key		Enter 26 (maximum) alphanumeric digits (13 hex pairs) in the Key field if 128 bit radio button is selected. Or, enter 10 (maximum) alphanumeric digits (5 hex pairs) in the Key field if 64 bit radio button is selected. The field displays the number of characters that have been entered. ***** in the field implies that the key has been extracted from the ini file. If *****

If **EAP-PEAP** radio button in Authentication field is selected, click the **EAP-Properties** button that appears when selecting the **EAP-PEAP** radio button to set also the following parameters.

Table 6.4

Parameters in EAP-Properties	Description	Default
User name	Input a user name in alphanumeric (maximum 100)	None
Password	Input a password in alphanumeric (maximum 100 alphanumeric). ***** in the field implies that the password has been extracted from the ini file. If ***** in the	None
Domain	Input a domain in alphanumeric (maximum 100)	None
Validate server certificate	Set up the requisition for server certificate. With check mark : certificate is required. Without check mark: certificate is not	Certificate is not necessary

If **EAP-TLS** radio button in Authentication field is selected, click the **EAP-Properties** button that appears when selecting the **EAP-TLS** radio button to set the following settings.

Table 6.5

Parameters in EAP-Properties	Description	Default
User name	Input a user name in alphanumeric (maximum	None
Certificate	Select a client certificate installed already (maximum 100 alphanumeric). Search button in the field will display a	None
Domain	Input in alphanumeric (maximum 100 alphanumeric)	None
Validate server certificate	Set up the requisition for server certificate. With check mark : certificate is required.	Certificate is required.

3. Click **WLAN** tab.

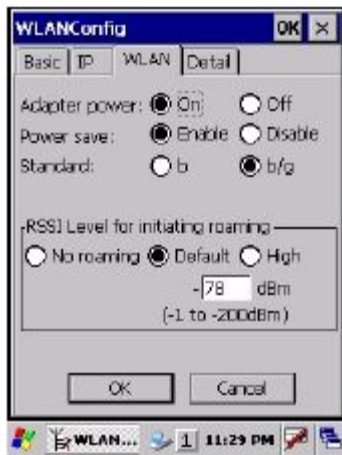


Figure 6.3

Table 6.6

Field / Radio Buttons	Description		Default
Adapter power	On	Enable power to the integrated WLAN module.	Yes
	Off	Disable power to the integrated WLAN module.	
Power save	Enable	Enable power save mode for the WLAN	Yes
	Disable	Disable power save mode for the WLAN	
Standard	b	Set up IEEE802.11b standard effect.	
	b/g	Set up IEEE802.11b/g standard effect.	Yes
RSSI Level for initiating roaming	No roaming	Set up “-100 dBm” for roaming starting threshold level,	
	Default	Set up “-78 dBm” for the roaming starting threshold	Yes
	High	Set up “-72 dBm” for roaming starting threshold level,	

4. Click **Detail** Tab.

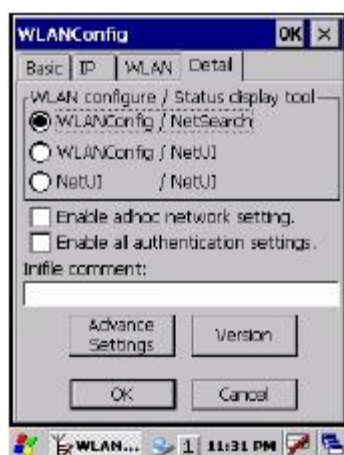


Figure 6.4

Table 6.7

Field / Radio Buttons		Description	Default
WLAN configure / Status display tool	WLANConfig / NetSearch	<ul style="list-style-type: none"> - Use only CASIO provided WLAN tool. - Configure WLAN setting with settings extracted from the ini file. - Initiate NetSearch when tapping the icon in 	Yes
	WLANConfig / NetUI	<ul style="list-style-type: none"> - Use both CASIO provided WLAN tool and MS tool. - Configure WLAN setting with settings extracted from the ini file. - Initiate NetUI (MS tool) when tapping 	
	NetUI / NetUI	<ul style="list-style-type: none"> - Use only the MS tool. - Configure WLAN setting, not with settings extracted from the ini file. - Initiate NetUI when tapping the icon in the task tray. <p>If this radio button is selected and the OK button</p>	
Enable adhoc network setting		With check mark : enable the setting.	
		Without check mark : disable the setting.	Yes
Enable all authentication settings		With check mark : enable the setting.	
		Without check mark : disable the setting.	Yes
Infile comment		Enter a comment of up to 100 characters to be	None

5. If **OK** button in the popup warning message (see Table 6.7 for description of NetUI/NetUI radio button) is clicked, the screen in Figure 6.5 appears. Click **OK** button to perform a reset on the terminal so that the setting becomes effective.

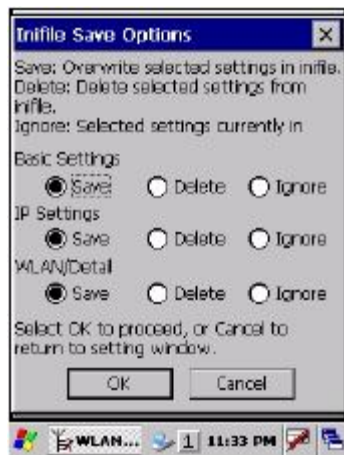


Figure 6.5

6. Check to make sure that the connection has been established using the **NetSearch** utility, and then navigating to the **Ping** function in there. Enter HostName first and then click **Ping** to check that you are connected to the network correctly.

7. eMbedded Visual C++

7.1 Building a Simple eVC++ 4.0 Test Program

1. On the PC, initiate eVC++ 4.0.
2. Navigate to **File** → **New** in the **File** menu.

Figure 7.1

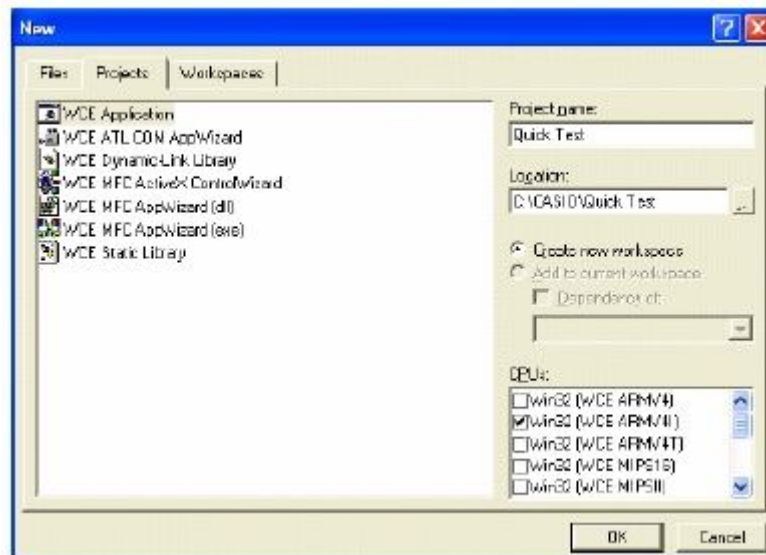
3.
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then click **OK** button.

8. Below the toolbar you will see a line of pull-down menu lists. Look for the one that indicates **the target devices available to you** and select **DT-X7** in the list. The right most pull-down menu list will change to **DT-X7 Device**.

Figure 7.2

9. Initiate an ActiveSync connection using one of the methods described in this guide.
10. Select **Rebuild All** from **Build** menu (or use the appropriate icon on the toolbar).



11. The program will be built and automatically downloaded to the DT-X7. By default, the program will be copied to the root folder on the terminal. Run the program to check that the process was successful. Note that for this basic example you will need to use the mouse emulator to close the application on the device.

You are now ready to begin development work with the DT-X7. The full operation of eVC++ 4.0 and the use of features such as remote debugging are beyond the scope of this guide. See the Chapter 10 “Resources” for details on where to start if you are new to eMbedded Visual C++ development.

7.2 Using CASIO Libraries from eVC++ 4.0

The following libraries (“Common Device Control Library”) are provided for C++ developers.

Table 7.1

Library	Dynamic Link	Import Library	Header File
System Library	SystemLib.dll	SystemLib.lib	SystemLib.h
Scanner Library	OBReadLib.dll	OBReadLib.lib	OBReadLib.h
Bluetooth	BluetoothLib.dll	BluetoothLib.lib	BluetoothLib.h
Camera Library	CameraLib.dll	CameraLib.lib	CameraLib.h
Printer Library	PrinterLib.dll	PrinterLib.lib	PrinterLib.h
Imager Library	ImagerLib.dll	ImagerLib.lib	ImagerLib.h

Each library in the table consists of a header file, a dll and a library file. The dlls are built into the ROM of the DT-X7 and you do not need to download them. The following is a simple example using one of the System Library functions in the simplest kind of WindowsCE program. The screen will flip 180° each time this program is executed.

1. Make sure all the “.h” files for the CASIO libraries are installed in **C:\Program Files\CASIO\MBSys\INCLUDE** (This is the default installation location but yours will be different if you installed the SDK to another location).
2. Make sure all the “.lib” files for the CASIO libraries have been installed in **C:\Program Files\CASIO\MBSys\LIB\ARMV4I**
3. In eVC++ 4.0, select **New** from the **File** menu.
4. Highlight **WCE Application**. Choose a location and a name for the project and make sure the ARMV4I option is checked. Click **Next >** button.
5. On the next dialog click **A simple Windows CE application** option. Click **Finish** and then click **OK** button.
6. Make sure the DT-X7 is the selected SDK and target device in the pull-down list boxes.
7. Click **ClassView** tab in **Solution Explorer** and expand **classes** fully until you can see **WinMain()** class. Double click it.
8. At the top of the source file, under **#include stdafx.h** code add the following code.

```
#include <SystemLib.h>
#include <SystemLibdef.h>
```

9. Move to the line // **TO DO: Place code here** and add the following code.

```
int

result = SysGet180Rotate();
if( result == FALSE )
{
    SysSet180Rotate( TRUE );
}
else
{
    SysSet180Rotate( FALSE );
}
```

10. On the **Project** menu, navigate **Add To Project** → **Files...**
11. Change **Files of type:** pull-down menu list to **Library files (.lib)**.
12. Navigate to the folder where the CASIO library files are stored (see step no. 2 in the previous page), highlight **SystemLib** file and click **OK** button.
13. Initiate **ActiveSync** to establish connection between the DT-X7 and the PC.
14. Select **Build All** from **Build** menu. The project will be built and copied to the DT-X7.
15. Check the operation by running the program. You should find that each time the program is executed, the screen flips 180°.

You should now be able to use the CASIO System library in your C++ applications. See the Common Device Control Library Manual for full details of all the functions. You may also like to try some of the sample programs provided by CASIO (see next section).

7.3 Sample Program

The following sample programs are included in the **DT-X7 Export SDK**.

Table 7.2

Notes:

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Name	Description
BluetoothLibSample	Connects to a Bluetooth printer and prints out data.
CameraLibSample	Takes pictures and displays them on the screen.
IMGLibSample	Scan barcodes using the imager with settings set by Imager setting file.
IMGLibSample2	Program of IMGDemo.exe
JpegSample	Displays Jpeg files
OBRLibSample	Reads a barcode using the Laser library
PrnLibSample	Prints out data on the built-in printer
SystemLibSample	Demonstrates LED and buzzer functions
FlinkLibSample	Demonstrate Infrared communication between two terminals using Flink protocol.

8. Visual Studio .NET 2003 and Visual Studio 2005

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modifications, the solution/project from Visual Studio .NET 2003 is automatically upgraded by Visual Studio 2005. This may result in different configuration of the output folder according to the parameter settings for the project file. Please take care when using Visual Studio 2005 to upgrade an existing application and always keep a backup of your existing project.

8.1 Using CASIO .NET Libraries from VB

The intention of this chapter is just to check that the development environment is set up correctly. See Chapter 3.5 for information on how to set up a connection between the DT-X7 and Visual Studio.

The following wrapper class library files that allow VB applications to access the Casio library (“Common Device Control Class Library”) functions are provided.

Table 8.1

Library	Dynamic Link Library
System Library	SystemLibNet.dll
Scanner Library	OBReadLibNet.dll
Bluetooth Library	BluetoothLibNet.dll
Camera Library	CameraLibNet.dll
Printer Library	PrinterLibNet.dll

The following shows how to create and start up a simple test program using one of the System functions. The screen flips 180° when the button on the form is pressed.

1. Create a new VB Smart Device Application in Visual Studio.
2. In **Solution Explorer**, right-click **References** and click **Add Reference...**
3. Click **Browse** and navigate to the folder where you have stored the CASIO .NET library files. Highlight **SystemLibNet.dll** and click **Open**. Click **OK** button.

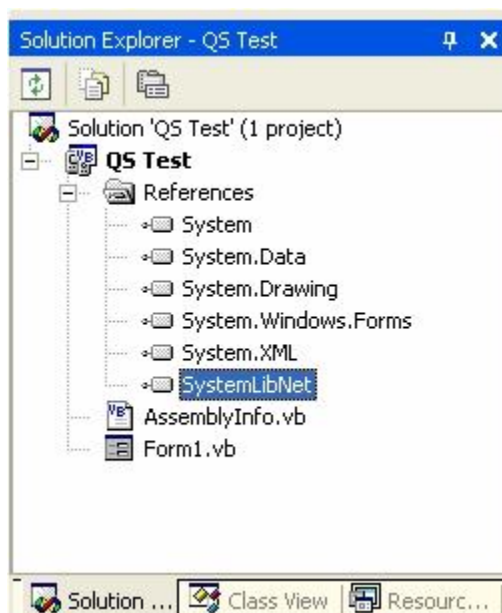


Figure 8.1

4. Add a button to the form, rename it **Rotate**, and double click it.
5. At the top of the source file, add the line:

```
Imports Calib
```

6. In the event function for the button click, add the following code.

```
If (SystemLibNet.Api.SysGet180Rotate() = 0 ) Then
  SystemLibNet.Api.SysSet180Rotate(True)
Else
  SystemLibNet.Api.SysSet180Rotate(False)
End If
```

Note:

If you type this code manually you should see the IntelliSense offer you suitable options as appropriate. If you do not, make sure you review steps 1 to 5 to make sure you have added the reference correctly.

7. Initiate **ActiveSync** to establish connection between the DT-X7 and PC.
8. Select **Deploy <name of project>** on **Build** menu.
9. The project will be built and copied to the DT-X7. By default, it will be copied to **\Program Files\<name of project>** folder. **SystemLibNet.dll** will be deployed to the same folder.
10. Check that the program works correctly on the DT-X7.

You can also use the CASIO samples as described in Chapter 7.3.

8.2 Using CASIO .NET Libraries from C#

The intention of this chapter is just to check that the development environment is set up correctly. See Chapter 3.5 for information on how to set up a connection between the DT-X7 and Visual Studio.

The following wrapper class library files that allow C# applications to access the CASIO library (“Common Device Control Class Library”) functions are provided.

Table 8.2

Library	Dynamic Link Library
System Library	SystemLibNet.dll
Scanner Library	OBReadLibNet.dll
Bluetooth Library	BluetoothLibNet.dll
Camera Library	CameraLibNet.dll
Printer Library	PrinterLibNet.dll

The following shows how to create and start up a simple test program using one of the System functions. The screen flips 180° when the button on the form is pressed.

1. Create a new C# Smart Device Application in Visual Studio .NET.
2. In **Solution Explorer**, right click **References** and click **Add Reference...**
3. Click **Browse** and navigate to the folder where you have stored the CASIO .NET library files. Highlight **SystemLibNet.dll** and click **Open**. Click **OK** button.

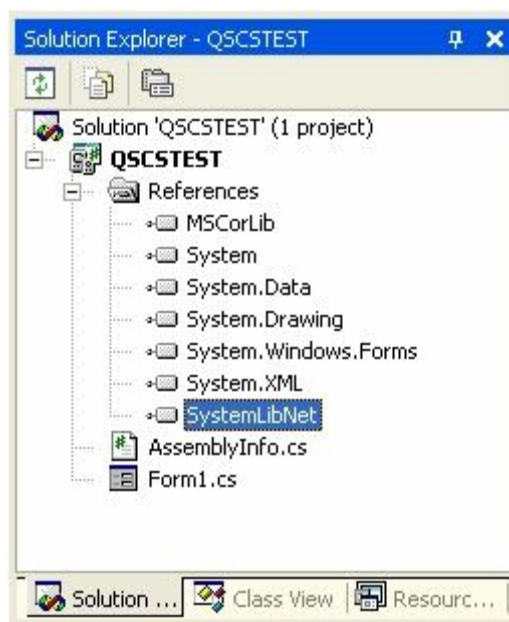


Figure 8.2

4. At the top of your source file add the following code.

```
using Calib;
```

5. Add a button to your form, double click it and add the following code:

```
if( SystemLibNet.Api.SysGet180Rotate() == 0 )  
    SystemLibNet.Api.SysSet180Rotate(true);  
else  
    SystemLibNet.Api.SysSet180Rotate(false);
```

Note:

If you add this code manually you should see the IntelliSense offer you suitable options as appropriate. If you do not see this, then review steps 2 to 4 in the previous page to make sure you have not made a mistake.

6. Initiate **ActiveSync** to establish connection between the DT-X7 and PC.
7. Select **Deploy** <name of project> on **Build** menu.
8. The project will be built and copied to the DT-X7. By default, it will be copied to \Program Files\<name of project> folder. SystemLibNet.dll will be deployed to the same folder.
9. Check that the program works correctly on the device.

You can also use the CASIO samples as described in Chapter 7.3.

8.3 Using CASIO Libraries from C++

The intention of this chapter is just to check that the development environment is set up correctly. See Chapter 3.5 for information on how to set up a connection between the DT-X7 and Visual Studio. You must install Visual Studio 2005 Service Pack 1 from Microsoft.

The following shows how to create and start up a simple test program using one of the System functions. The screen flips 180° when the program is carried out.

Before following the steps below, you will need to add the paths for the CASIO header and library files to Visual Studio 2005. Select **Tools-Options-Projects and Solutions-VC++ Directories**. Change the “Platform” to “DT-X7” and add the path to the CASIO header and library files to the respective lists for “Include files” and “Library files”.

1. First, create a **Win32 Smart Device Project** called **DeviceApp** for Visual C++ in Visual Studio 2005.
2. Choose **Pocket PC 2003** in the Selected SDKs field in the Platforms of Win32 Smart Device Project Wizard and click < button.

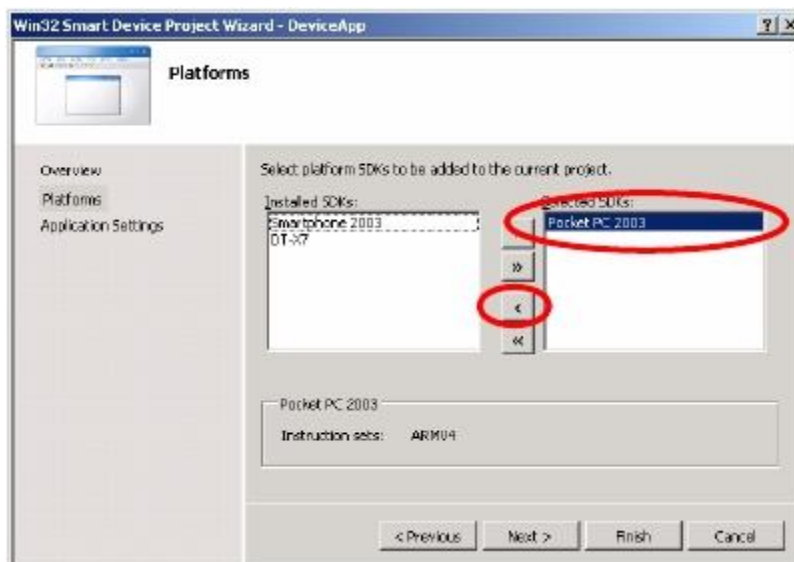


Figure 8.3

3. Choose **DT-X7** in the Installed SDKs field and click > button.

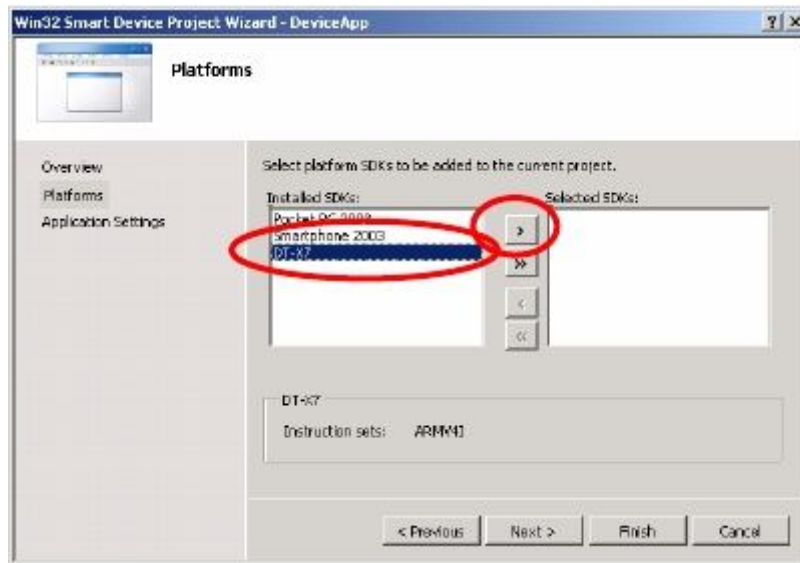


Figure 8.4

- 4.

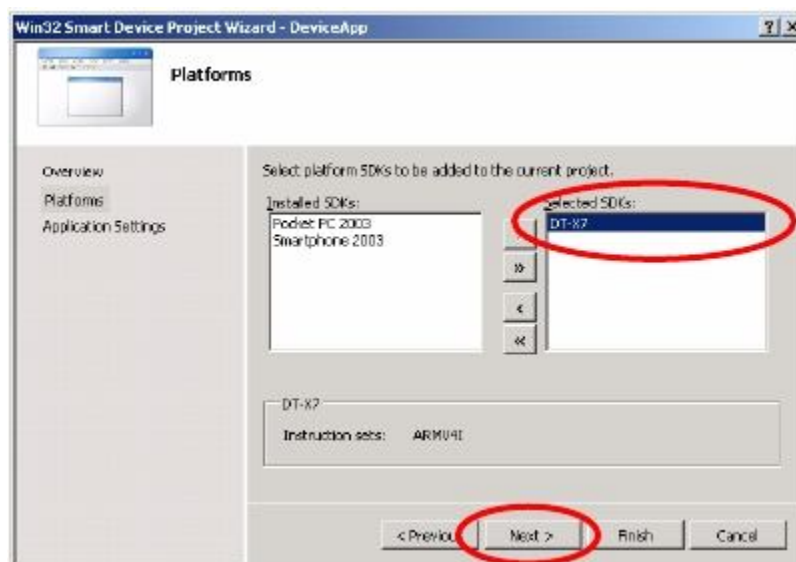


Figure 8.5

5. Choose **Console Application** for the Application type in the Application Settings menu, and click **Finish** button.
6. In Solution Explorer, click **DeviceApp.cpp** and then append the source code below subsequent to “#include <commctrl.h>”.

```
#include <SystemLib.h>
```

7. Append the source code below in the main function of **DeviceApp.cpp**.

```
int result;  
result = SysGet180Rotate();  
  
if( result == FALSE ){  
    result = SysSet180Rotate( TRUE );  
}  
else{  
    result = SysSet180Rotate( FALSE );  
}
```

8. Choose **Properties** in the Project of Visual Studio 2005, and navigate to **Configuration Properties** → **Linker** → **Input** → **Additional Dependencies** and then append **SystemLib.lib** (see red circle).

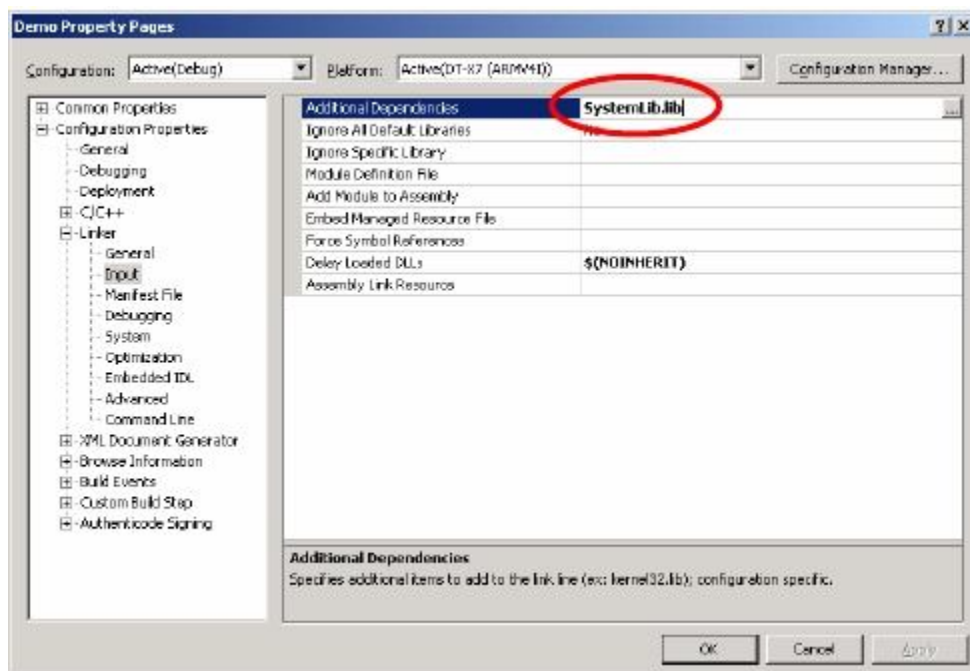


Figure 8.6

9. Choose **DT-X7 Device** for the Target Device to establish connection with the PC.
10. Choose **Debug** in Visual Studio 2005 and then click either **Start Debugging** or **Start Without Debugging**.
11. The project will be built and copied to the “\Program Files\<name of project>” folder (by default) in the DT-X7.
12. Check that the program runs correctly on the DT-X7.

8.4 Sample Program

The following sample programs are included in the **DT-X7 Export SDK**.

Table 8.3

Notes:

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Program	Description
BluetoothLibSampl	Connects to a Bluetooth printer and prints out data.
CameraLibSample	Takes pictures and displays them on the screen.
IMGLibSample	Scan barcodes using the imager with settings set by Imager setting file.
IMGLibSample2	Program of IMGDemo.exe
JpegSample59	Displays Jpeg files
OBRLibSample	Reads a barcode using the Laser library
PrnLibSample	Prints out data on the built-in printer
SystemLibSample	Demonstrates LED and buzzer functions
FlinkLibSample	Demonstrate Infrared communication between two terminals using Flink protocol.

9. Device Emulator

The **Device Emulator** provides application developers with an environment that, without having the actual device available, allows them to debug basic functions and performance of an application at source level by stepping through the code.

9.1 Software Required

The **Device Emulator** requires the software(s) listed below before installing the emulator. Install each required component by following the installation order (numbered in numeric) and then finally install the **Device Emulator**. See note 1.

Using Visual Studio 2005

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Using Visual Studio.NET 2003

1. ActiveSync 4.2 or a later version (If required)
<http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en>
2. Standalone Device Emulator 1.0 with Windows Mobile OS Images (If required. See note 2.)
<http://www.microsoft.com/downloads/details.aspx?FamilyID=c62d54a5-183a-4a1e-a7e2-cc500ed1f19a&displaylang=en>
3. Visual Studio .NET 2003 (Required)
4. CASIO DT-X7 SDK (Required)

Using eMbedded Visual C++ 4.0

1. ActiveSync 4.2 or a later version (Required)
<http://www.microsoft.com/downloads/details.aspx?FamilyID=7269173a-28bf-4cac-a682-58d3233efb4c&DisplayLang=en>
2. Standalone Device Emulator 1.0 with Windows Mobile OS Images (If required. See note 2.)
<http://www.microsoft.com/downloads/details.aspx?FamilyID=c62d54a5-183a-4a1e-a7e2-cc500ed1f19a&displaylang=en>
3. Microsoft eMbedded Visual C++ 4.0 (Required)
<http://www.Microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=1DACDB3D-50D1-41B2-A107-FA75AE960856>
4. Microsoft eMbedded Visual C++ 4.0 ServicePack4 (Required)
<http://www.microsoft.com/downloads/details.aspx?familyid=4A4ED1F4-91D3-4DBE-986E-A812984318E5&displaylang=en>
5. CASIO DT-X7 SDK (Required)

Notes:

1. The **Device Emulator** is not necessarily installed if your PC has already a Device Emulator installed for other CASIO handheld terminal.
2. The software is not required if your PC already has **Visual Studio 2005** installed.
3. If the audio device in “Sound, video and game controllers *” in Device Manager on your PC has been disabled, the **Device Emulator** does not start up correctly. Ensure that you enable it before starting up the **Device Emulator**.
 - * : The device category name is dependent on the OS. The example is shown supposedly your PC runs in Windows 2000.

9.2 Starting up the Device Emulator

After installing all required software described in Chapter 9.1, follow the steps below to start up the **Device Emulator** on your PC.

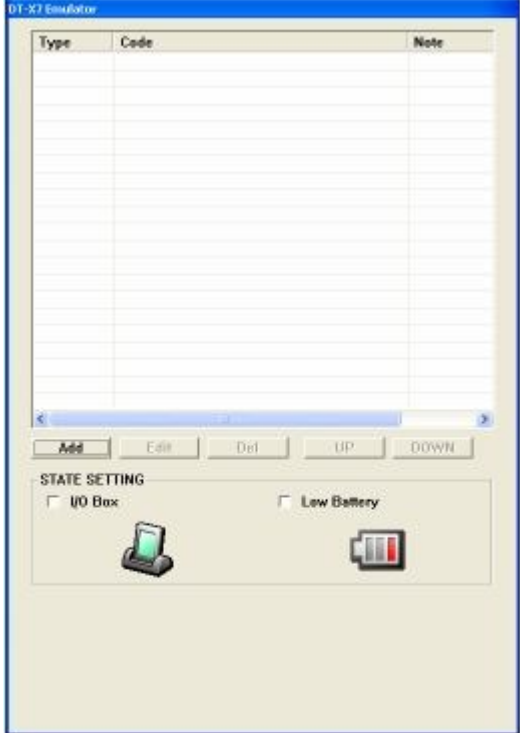
- 1.
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Figure 9.1

Terminology of **Emulator** and **Simulator**;

The **Emulator** described in this reference manual is a software application that behaves in a very similar way to the actual device by imitating individual hardware components or protocols present in the actual hardware.

On the other hand, the **Simulator** is also a software application that logically integrates application programming interfaces (“API”) and certain other functions to allow debugging of the application program using external events. The **Emulator** performs in a pseudo CPU and hardware environment and it is impossible for the application to recognize whether it is in the actual device environment or pseudo environment. However, actions carried out by the **Simulator** are not as alike to those performed by actual components but merely mimic them very closely.



9.3 Debugging Applications

This chapter describes how to debug your application using the **Device Emulator**. Before starting to “Build”, establish a connection between the DT-X7 and your PC via ActiveSync by referring to Chapter 9.4 “Using the Device Emulator”.

For the basic order of developing an application, refer to Chapters 7. “eMbedded Visual C++” and 8. “Visual Studio .NET 2003 and Visual Studio 2005”.

9.3.1 Setting Build Configuration

When using Visual Studio 2005

-

DT-X7 Emulator in the target device pull-down menu. See Figure 9.3.

Figure 9.3

When using eMbedded Visual C++ 4.0

-

C++ 4.0, Win32 (WCE ARMV4I) Debug in the Active Configuration pull-down menu, and **DT-X7 Device** in the Default Device pull-down menu.

Figure 9.4

9.3.2 Debugging Applications

Basic Debug Operation

The debug operation used for the **Device Emulator** in both Visual Studio 2005 and eMbedded Visual C++ 4.0 is the same as an ordinary debug operation using the actual terminal.

Debugging with the Device Emulator

With the **Device Emulator**, it is possible to set a break point in the source code of the application for step-by-step debugging.

Debug	Any CPU
DT-X7 Emulator	

DT-X7	Win32 (w/CE ARMV4I) Debug	DT-X7 Device
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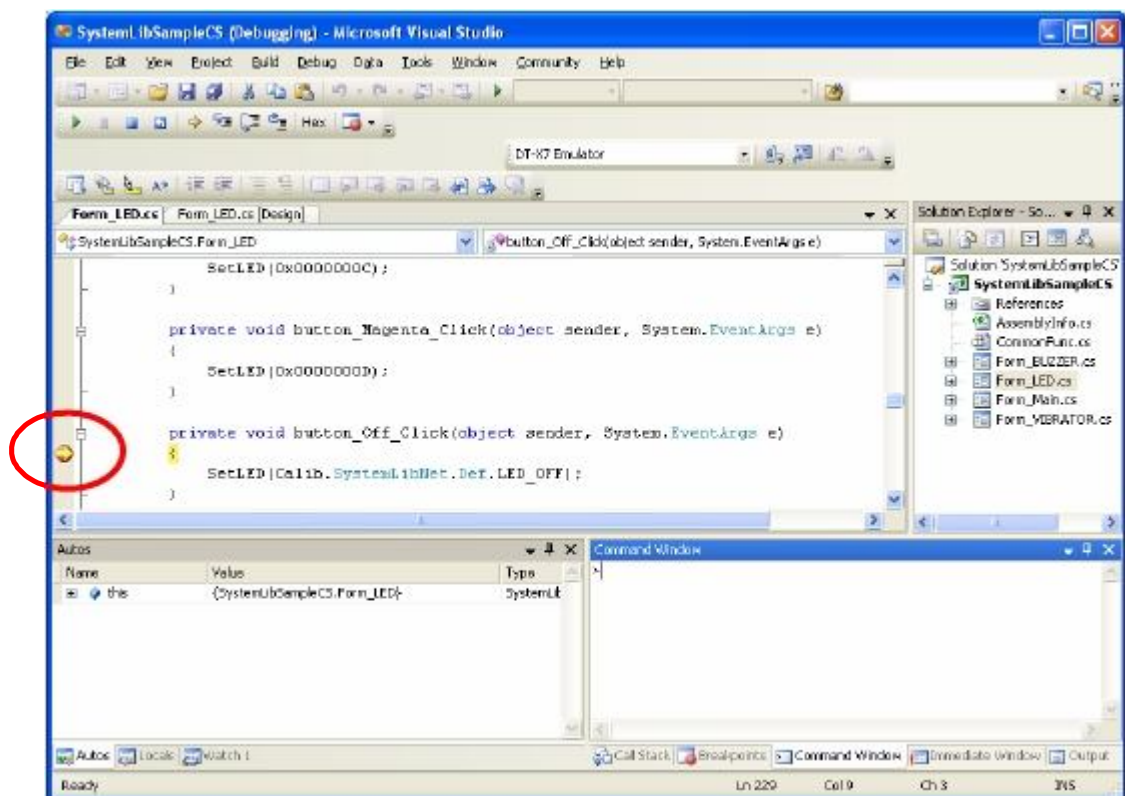
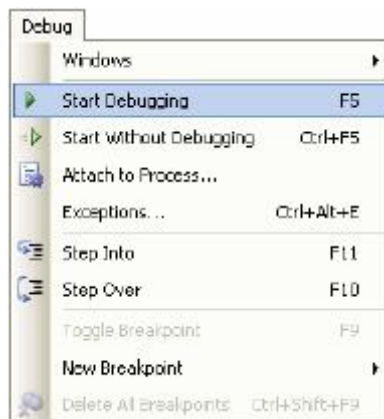
When using Visual Studio 2005

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When using eMbedded Visual C++ 4.0

1. Establish a connection between the **Device Emulator** and PC via ActiveSync before starting debugging in eMbedded Visual C++ 4.0. For establishing connection via ActiveSync, refer to Chapter 9.4.3 “Connecting via ActiveSync”.
2. Navigate to **Build** in the menu bar → **Start Debug** → **Go** to start up debugging.

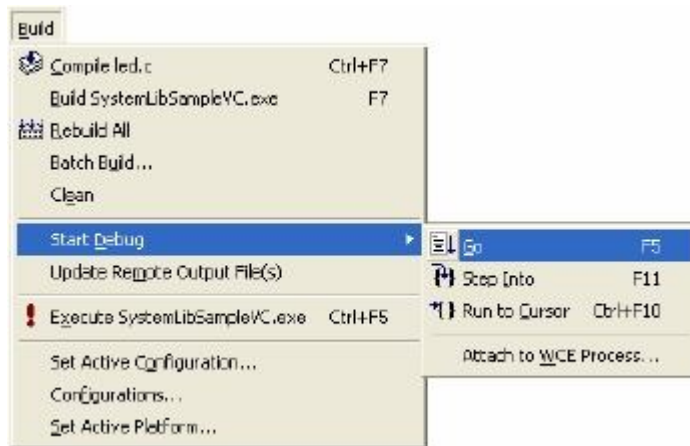


Figure 9.7

3. Similar to ordinary debugging operations with an actual DT-X7, the **Device Emulator** allows break point setting (circled in red in Figure 9.8) in the source code and step-by-step debugging.

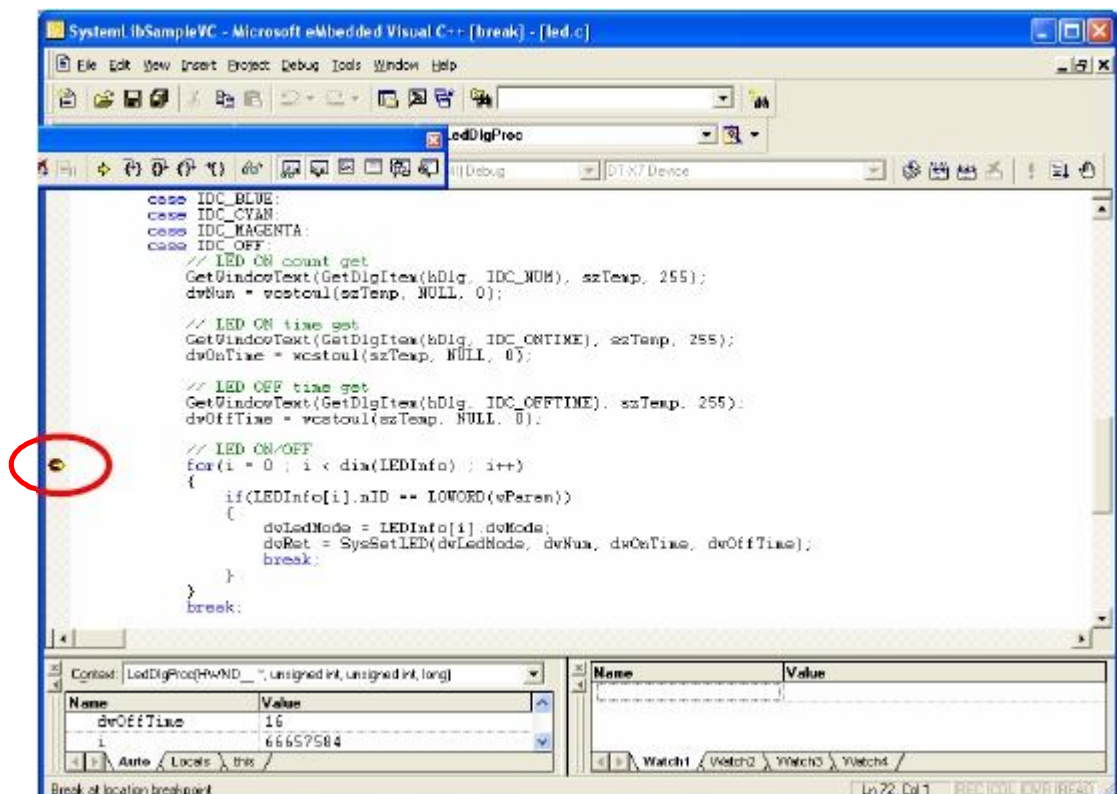


Figure 9.8

9.4 Using the Device Emulator

9.4.1 DT-X7 Device Emulator

The **DT-X7 Device Emulator** emulates various operations carried out by the actual DT-X7 device on the PC's screen such as mouse operation, input on PC's keyboard, displaying execution of applications, and operations by actual devices such as the scanner. Figure 9.9 shows an emulated DT-X7 device on the screen of a PC.



Figure 9.9

Key Input

The emulator offers key input capability similar to that of the actual DT-X7 device. For instance, a key on the emulated keyboard of DT-X7 on the screen (see Figure 9.9) can be clicked with the PC mouse as well as key input made directly on the PC's keyboard.

Reading Bar Codes

The emulator enables bar codes pre-registered in the I/O Simulator (see Figure 9.2) to be input when clicking Trigger key on the emulated keyboard (see Figure 9.9). Note however that the Trigger key must be continuously pressed for a second or more otherwise an incorrect key input may result.

Sound

The emulator offers beep and sound capability similar to that of the actual DT-X7 device.

Indications

The emulator offers a variety of indications on the screen (see Figures 9.10 and 9.11) for events using the emulated components.

Table 9.1

Indication	Description
LED (see Figure 9.10)	The LED lights green when reading a bar code
Vibrator ON/OFF	The emulated DT-X7 vibrates.
Low battery warning (see Figure 9.11)	The low battery icon appears for low battery warning.
Pressing down Trigger key (see Figure 9.11)	A triangle appears indicating that the trigger is being pressed.

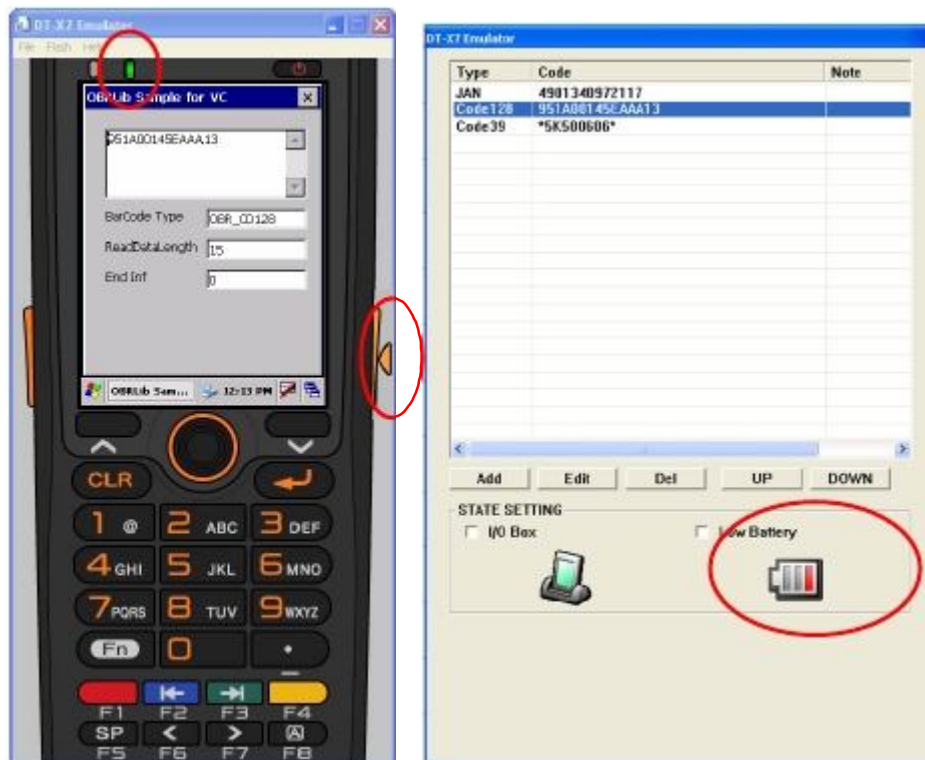


Figure 9.10

9.4.2 I/O Simulator

The I/O Simulator simulates registration of bar codes, generation of low battery warning, detection of terminal being mounted on cradle.

Registration of bar code symbologies

1.

Click **ADD** button (circled in red in Figure 9.12) to go into the bar code registration mode.

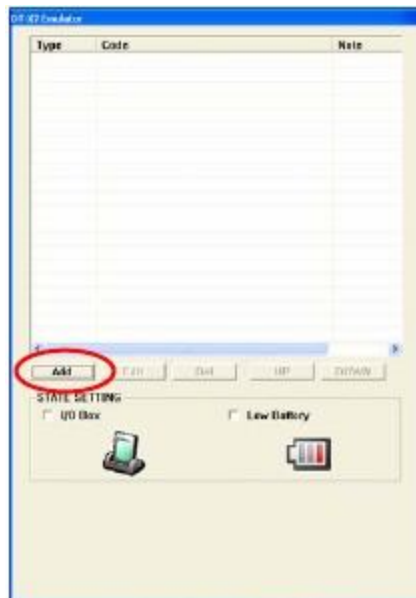


Figure 9.12

2.

Select a bar code symbology in the **Code Type** pull-down menu that you wish to register in the **I/O Simulator**.

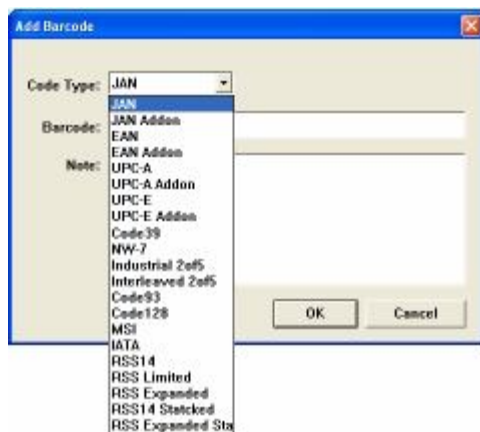


Figure 9.13

- 3 Registration of bar code and note
 - Enter bar code data in the **Barcode** field (see Figure 9.14) and a note about the bar code in the **Note** field if necessary. Click **OK** button to complete the bar code registration.



Figure 9.14

- 4 Completion of registration
 - After completion of the bar codes registration, the screen in Figure 9.15 shows a list of bar codes that have been registered in the **I/O Simulator**. Prior to debugging with the **Device Emulator**, make sure that you register all bar codes you wish to use in debugging.



Figure 9.15

- 5 Editing registered bar code content
 - Highlight a bar code in the list of registered bar codes (see Figure 9.15) and click **Edit** button. Figure 9.16 appears for editing the bar code and its information.



Figure 9.16

- 6 Deleting registered bar code content
 - Highlight a bar code in the list of registered bar codes (see Figure 9.15) and click the **Del** button. Dialogue screen in Figure 9.17 appears for you to confirm the deletion. If it is okay to delete, click **Yes** button, otherwise click **No** button.



Figure 9.17

Detection of Terminal in Cradle / Low Battery Warning

If you check the **I/O Box** and **Low Battery** boxes in STATE SETTING (see Figure 9.18), the simulator simulates the respective events in the emulator.

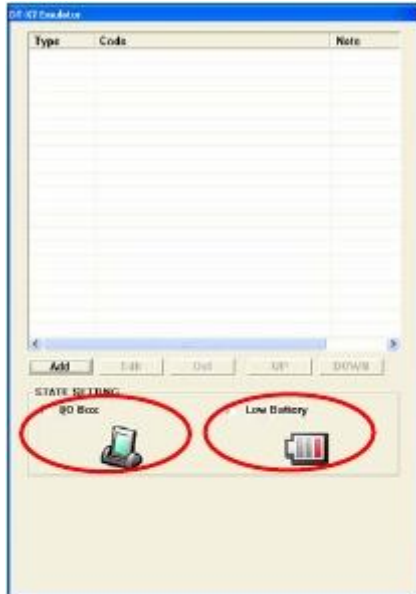


Figure 9.18

I/O Box

If this box is checked, a notification is issued that the connection between the DT-X7 **Device Emulator** and cradle has been established. This notification can be utilized by the application.

Low Battery

If this box is checked, a notification that a low battery state has occurred is raised. The icon in the toolbar in the emulated screen (see Figure 9.10) appears too. The notification can be utilized by the application to recognize the low battery state in the hardware.

9.4.3 Connecting via ActiveSync

If debugging with the **Device Emulator** is carried out in either eMbedded Visual C++ 4.0 or Visual Studio 2005, or transmission/reception of a file with the **Device Emulator** is carried out, **ActiveSync** must be used.

Setting ActiveSync

1. Start up **ActiveSync** and then navigate to **File** → **Connection Settings**



Figure 9.19

2. In **Connection Settings** screen, check in the **Allow connections to one of the following** box and select **DMA** in the pull-down menu. See Figure 9.20.



Figure 9.20

Connection via ActiveSync

The ways to establish connection of the **Device Emulator** via **ActiveSync** are ;

-
-

1. Start up the **Device Emulator** by referring to Chapter 9.2 “Starting up the Device Emulator”.
2. Start up Visual Studio 2005, and then navigate to **Tools** → **Device Emulator Manager**.

If Visual Studio 2005 is not available, start up the Standalone Device Emulator 1.0.

C:\Program Files\Microsoft Device Emulator\1.0\dvcmumanager.exe

3. Right-click **DT-X7 Emulator** in **Available Emulators** list and then select **Cradle** in the popup menu. See Figure 9.21.

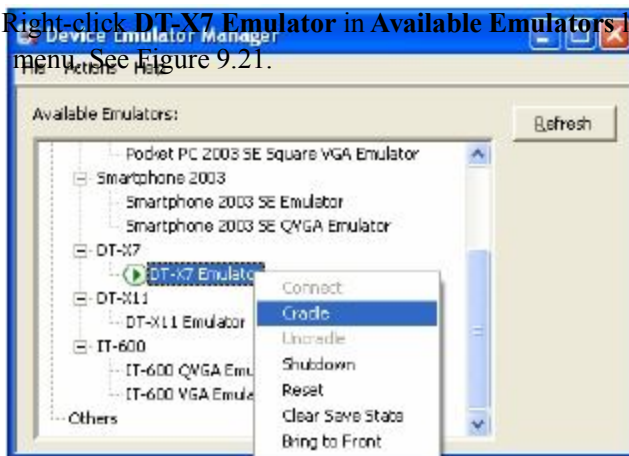


Figure 9.21



4. Make sure ActiveSync has started up and the icon in the status bar appears. See the emulated screen of DT-X7 in Figure 9.22. The icon indicates that the connection via ActiveSync has been established.



Figure 9.22

10. Resources

Microsoft's own <http://msdn.microsoft.com/mobility/> is an extremely comprehensive resource for programmers targeting WindowsCE .NET based devices. It includes links to most other useful web based resources. You will find detailed Software, Library and .NET Library manuals on <http://world.casio.com/system/pa>.